YPL-0061

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for detecting a polymerase chain reaction (PCR) product, comprising:

providing at least a pair of electrodes in a PCR solution-containing vessel, wherein the pair of electrodes is connected to an impedance sensor;

performing PCR;

producing an electric field between the pair of electrodes; and

measuring a change in ~~a dielectric property in~~ impedance magnitude of the PCR solution after a PCR cycle,

wherein the measuring is performed in the absence of an additional probe for generating an electrical signal.

2. (Currently amended) The method according to claim 1, wherein the neither electrode of the pair of electrodes does not comprises an attached probe for generating an electrical signal that binds to reactants or products of the PCR.

3. (Original) The method according to claim 1, wherein the PCR solution-containing vessel is a PCR tube or a polymerization microchamber.

4. (Canceled)

5. (Previously presented) The method according to claim 1, wherein the electric field is produced using an alternating current at a frequency of 1 Hz to 100 MHz.

6. (Previously presented) The method according to claim 1, wherein the electric field is produced using an average AC voltage of 1 mV to 10 V.

7. (Previously presented) The method according to claim 1, wherein the PCR solution-containing vessel includes a PCR tube, and the electrodes are installed to be opposite to each other at a predetermined height from a bottom of the PCR tube.

8. (Previously presented) The method according to claim 1, wherein the PCR solution-containing vessel includes a polymerization microchamber, and the electrodes are installed at upper and lower sides of the microchamber, respectively.

9. (Canceled)

10. (Currently amended) The method according to claim 1, ~~further comprising:~~wherein the measuring

connecting ~~an~~ impedance ~~sensor to~~ the electrodes ~~to measure a change in an~~of impedance magnitude with ~~an~~ increase of in the number of PCR ~~cycles~~ is at a predetermined alternating current voltage frequency.

11. (Currently amended) The method according to claim 10, wherein the predetermined alternating current voltage frequency is about 1,000 Hz.

12. (New) A method for detecting a polymerase chain reaction (PCR) product, comprising:

providing at least a pair of electrodes in a PCR solution-containing vessel, wherein the pair of electrodes is connected to an impedance sensor;

performing PCR;

producing an electric field between the pair of electrodes; and

detecting formation of the PCR product in real-time by measuring a change in impedance magnitude of charged reaction participants of the PCR solution.